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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,106	11/17/2003	Harue Nakashima	0553-0382	3243

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CHICAGO, IL 60606

EXAMINER
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GARRETT, DAWN L

ART UNIT	PAPER NUMBER
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1794

MAIL DATE	DELIVERY MODE
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06/02/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/715,106	<b>Applicant(s)</b> NAKASHIMA ET AL.	
	<b>Examiner</b> Dawn Garrett	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 4-6,36-39,42,45-49 and 51-64 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-6,36-39,42,45-48 and 57-60 is/are allowed.
- 6) ☒ Claim(s) 49,51-56 and 61-64 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This Office action is responsive to the amendment filed March 10, 2008. Claims 1-3, 7-35, 40, 41, 43, 44, and 50 are canceled. Claims 4-6, 36-39, 42, 45-49, and 51-64 are pending. Claims 49, 51, 53, 55, 57, and 61-63 have been amended.
2. The claim objections to claims 40, 41, and 44 set forth in the last Office action (mailed December 14, 2007) are withdrawn due to the cancellation of claims 40, 41, and 44.
3. The rejection of claim 43 under 35 U.S.C. 112, second paragraph, set forth in the last Office action paragraph 9, section c, is withdrawn due to the cancellation of claims 43.
4. The rejection of claim 49 under 35 U.S.C. 112, second paragraph, set forth in the last Office action paragraph 9, section d, is withdrawn due to the amendment of claims 49.
5. The rejection of claims 53 and 61 under 35 U.S.C. 112, second paragraph, set forth in the last Office action paragraph 9, section d, is maintained. Claims 53 and 61 recite “a perylene”. It is not clear if applicant intends to recite only the compound perylene or also perylene derivatives.
6. The rejection of claim 55 under 35 U.S.C. 112, second paragraph, set forth in the last Office action paragraph 9, section e, is withdrawn due to the amendment of claim 55.
7. The rejection of claim 63 under 35 U.S.C. 112, second paragraph, set forth in the last Office action paragraph 9, section f, is withdrawn due to the amendment of claim 63.
8. The rejection of claim 50 under 35 U.S.C. 103(a) as being unpatentable over Nakagawa et al. (US 2004/0124766 A1) in view of Shi et al. (US 6,680,132) is withdrawn due to the cancellation of claim 50.

***Claim Rejections - 35 USC § 112***

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claims 51, 53-56, and 61-64 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Some of the claims are directed to embodiments in which there are two light emitting materials/guests within a single light emitting layer. While the specification sets forth specific embodiments comprising a host material and a single light emitting dopant within a light emitting layer, it is not seen where the originally filed specification has support for two guest light emitting materials within a single light emitting layer:

In claim 51, there is no support for an EL device embodiment having the metal complex as the guest material and additionally comprising a red light emitting material.

In claim 53, there is no support for the first layer having both perylene as a light emitting dopant material in addition to another light emitting material within the same layer.

In claim 55, there is no support for the metal complex as guest material in a light emitting layer in addition to a green light emitting material.

In claim 61, there is no support for the metal complex as a guest material in combination with perylene as a light emitting material in the same layer.

The claimed embodiments listed above are considered to comprise new matter. Claims 54, 56, 62-64 have been included in the rejection as they dependent from claims comprising new matter.

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 61-64 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 61 recites a three-layer electroluminescence layer and that the second layer and third layer comprise the metal complex of the listed formula. The claim later recites the "metal complex represented by the general formula in the first layer is a guest material". There does not seem to be proper antecedent basis for the metal complex present in the first layer. It is unclear if the metal complex is present in only the second and third layers or if the complex is present in all of the three layers. Clarification and/or correction are required.

### ***Claim Rejections - 35 USC § 103***

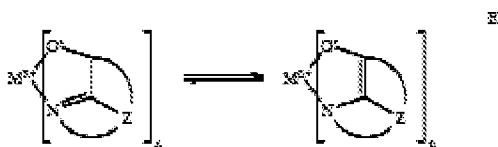
13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 49, 51, and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagawa et al. (US 2004/0124766 A1) in view of Shi et al. (US 6,680,132). Nakagawa et al.

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teaches organic electroluminescent devices comprising a substrate, anode, light emitting layers, and cathode (see abstract). The device comprises red, green and blue light emitting layers (see par. 142-154). Dopant for the blue emitting layer includes perylene (see par. 158). The red light emitting layer and the green light emitting layer may both contain a quinolinolato-based metal complex (see par. 162). Nakagawa et al. does generally teach quinolinolato-based metal complexes, but fails to teach the specific quinolinolato metal complexes of the present claims. Shi et al. teaches in analogous art a red light emitting layer for an electroluminescent device comprising metal complexes such as chelated oxinoid compounds (also known as quinoline compounds) (see col. 8, lines 46-67) including the following formula (see col. 8, lines 5-27):



wherein

M represents a metal;

n is an integer of from 1 to 4; and

Z independently in each occurrence represents the atoms completing a nucleus having at least two fused aromatic rings.

Since M represents a metal, this teaching encompasses Ti, Zr, Hf and Rf of Group IV and more specifically, Shi et al. clearly mentions “Zirconium oxine” at col. 8, lines 66-67. The ligand required by the instant claims is clearly taught by Shi et al. (see all of col. 8). It would have been obvious to one of ordinary skill in the art at the time of the invention to have selected the compound taught by Shi et al. for the Nakagawa et al. metal complex material for the red and green emitting layers, because Nakagawa et al. teaches such a compound is desirable for a light emitting layer.

The dopants for the red emitting layer include red emitting DCJTb and DCM (see par. 160) per claim 51.

Claim 49 now states the metal complex of the light emitting layer is a guest material; however, there are no specific limitations regarding the amount of metal complex that is required or amounts of further materials in the layer compared to the metal complex.

***Allowable Subject Matter***

15. Claims 4-6, 36-39, 42, 45-48, and 57-60 are allowed. (Reasons for allowable subject matter set forth in prior Office actions).

***Response to Arguments***

16. Applicant's arguments filed March 10, 2008 have been fully considered but they are not persuasive.

With regard to the rejections over claims 53 and 61 under 35 U.S.C. 112, second paragraph, set forth in the last Office action, applicant states the claims were recited to overcome the Examiner's objections to these claims. The examiner submits the amendment did not overcome the rejection and also, applicant appears to have introduced new matter by amendment. The reasons for the 35 U.S.C. 112, first and second paragraph, rejections over claims 53 and 61 are set forth in this Office action.

With regard to the prior rejections over claims 55 and 63, the amendment has overcome the previously stated rejection, but the examiner submits new matter was introduced by amendment. The reasons for the rejection of claims 55 and 63 is set forth in this Office action.

With respect to the 35 U.S.C. 103(a) rejection of claims 49, 51 and 52 over Nakagama in view of Shi, the examiner submits that although applicant states the complex is a "guest

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material” in amended claim 49, no particular amounts or other materials are specifically set forth.

Nakagama in view of Shi renders obvious a device having a single light emitting layer

comprising the metal complex as a component and the inclusion of a red light emitting material.

### ***Conclusion***

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dawn Garrett whose telephone number is (571) 272-1523. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on (571) 272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dawn Garrett/  
Primary Examiner, Art Unit 1794